

REMARKS

I. Drawings

The Drawings on the attached Replacement Sheets are revised as requested by the Examiner.

II. Specification

The specification is revised as requested by the Examiner.

III. Claim Amendments

Claims 1-11 are pending.

To correct antecedent basis Claim 1 has been amended to recite "plating the moving strip by anodically dissolving tin anodes facing the strip into an electroplating solution, and depositing anodically dissolved tin from the tin anodes on at least part of the strip acting as a cathode".

To correct antecedent basis Claim 1 has been amended to recite "wherein each anode comprises an anode basket having a front wall facing a side of the moving strip and the tin of the tin anodes is supplied to the electroplating solution in the form of tin pellets held in each said anode basket". The language the "front wall facing a side of the moving strip" is consistent with the above-mentioned language in Claim 1 "tin anodes facing the strip". Applicant is merely labeling the wall as a front wall to improve readability.

Claim 1 has been amended to recite "wherein [[part] edge portions of the wall of the tin anodes elongated generally parallel to the direction of movement of the facing moving strip are [[is]] masked out using adjustable masking means comprising moveable edge masks elongated generally parallel to the direction of movement of the facing moving strip, the adjustable masking means controlled and guided dependent on strip width and/or tin coating thickness distribution."

This is supported by Fig. 6 showing the anode baskets 12 elongated in a direction generally parallel to the direction of travel of the strip facing the basket and Fig. 7 showing the moveable edge masks 13. The "elongated generally parallel" language accounts for the possibility of the anode basket being generally vertical but inclined as shown in Fig. 6.

Claims 3 and 5 are amended to correct antecedent basis.

New dependent claim 6 recites the transverse overlap of the edge mask and strip ranges from 30 to 60 mm as disclosed at page 8.

Claim 7 recites moving the edge masks to adjust lateral overlap from a distance from the plating line as disclosed at page 7, line 23.

Claim 8 recites a remainder of space on the front wall between the moveable edge masks is open as shown by Fig. 7.

Claim 9 recites the anode has a top and a bottom and the anode is closer to the strip at the bottom than at the top as supported at page 7, lines 12-13.

Claim 10 recites the edge portions of the wall of the tin anodes and moveable edge masks are elongated generally vertically as shown by combining the features of Figs. 6 and 7.

Claim 11 recites the longitudinal axis of the moving strip facing the front wall does not oppose the moveable edge masks as shown by combining the features of Figs. 6 and 7.

IV. Claim Objections and 35 USC §112, second paragraph

The claims have been amended to respond to the objections and the 35 USC 112, second paragraph rejection.

V. 35 U.S.C. §103

A. Claims 1-2 and 5 have been rejected under 35 USC §103(a) as being unpatentable over Allen (US 2,719,820, hereinafter Allen) in combination with Botts et al. (US 5,776,327, hereinafter Botts).

Allen has been cited as teaching a process for high speed metal strip electroplating comprising plating the strip S (equated to a continuous steel strip) with tin anodes 16 (col. 1, lines 72 to Col. 2, line 1) facing the strip (Fig. 1) into an electroplating solution (a plating bath) (Col. 2, lines 1-4) and depositing tin on at least part of the strip (equated to coating steel strip with tin) (Col. 1, lines 15-16) acting as a cathode (equated to depositing electrolytically on the strip. S.) as known in the art (Col. 2, lines 1-4).

The Office action indicates the process of Allen does not disclose:

(a) wherein the plating is by anodically dissolving tin anodes (claim 1) and

(b) wherein tin is supplied to the electroplating solution in the form of pellets held in an anode basket, wherein part of the tin anodes is masked out using adjustable masking means that are controlled and guided dependent upon strip width and/or tin coating thickness distribution.

Botts is said to teach electrolytic tinning (col. 2, lines 40-42, and col. 5, claims 1 and 5). [Allen] Botts is said to teach tin is supplied to the electroplating solution in the form of pellets (anode particles) held in an anode basket 10 (col. 2, lines 40-42, and col. 3, lines 43-63) wherein part of the tin anodes is masked out using adjustable masking means (preferably, the step of masking selected portions of an anode basket comprises covering the anode basket with a non-conductive frame, placing a plurality of non-conductive plates on the frame, and adjusting the position of each of the plurality of non-conductive plates on the frame to achieve a desired electric field distribution) (col. 2, line 65 to col. 3, line 3). Botts, Fig. 2 shows an embodiment of a mask 20.

The Office action asserts it would be obvious to one of ordinary skill in the art to modify the plating described by Allen wherein the plating is by anodically dissolving tin anodes, and wherein tin is supplied to the electroplating solution in the form of pellets held in an anode basket, wherein part of the tin anodes is masked out using adjustable masking means because this would have altered the electric field to produce a uniform plating thickness across the entire workpiece as taught by Botts (Col. 4, line 67 to col. 5, line 3).

This rejection is respectfully traversed.

Amended Claim 1 differs from the combination of Allen and Botts et al. by having the edge portions of the wall of the tin anodes which extend in the machine direction, masked out by adjustable masking means elongated generally parallel to the machine direction. Allen does not disclose the tin anodes being baskets containing tin pellets, nor any masking. Botts is a batch-wise coating process (i.e., a continuously moving substrate to be coated is absent), wherein the non-conductive plates are masking means positioned transversely to the longitudinal edges of the objects to be coated. Masking means positioned in such a way would not prevent the occurrence of dog bone formation on a continuously moving strip.

Moreover, Claim 9 further distinguishes over the references by reciting the anode has a top and a bottom and the anode is closer to the strip at the bottom than

at the top as supported at page 7, lines 12-13. Although Fig. 1 of Allen showed an inclined position, this inclined position is the opposite of Botts' teaching of a constant distance between the anode and the object in the height direction.

Claim 11 further distinguishes over the references by reciting the longitudinal axis of the moving strip facing the front wall does not oppose the moveable edge masks as shown by combining the features of Figs. 6 and 7. The transverse members of Botts would not permit this.

B. Claims 3 and 4 have been rejected under 35 USC §103(a) as being unpatentable over Allen in combination with Botts and further in view of Schober (US 4,164,454).

It is respectfully submitted Schober does not make up for the deficiencies of Allen and Botts.

VI. Conclusion

In view of the above it is respectfully submitted all objections and rejections are overcome. Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

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ATTACHMENT I –Replacement Sheets